

Title (en)

ICE MACHINE WITH A DUAL-CIRCUIT EVAPORATOR FOR HYDROCARBON REFRIGERANT

Title (de)

EISMASCHINE MIT EINEM ZWEIKREISVERDAMPFER FÜR KOHLENWASSERSTOFFKÄLTEMITTEL

Title (fr)

MACHINE À GLACE DOTÉE D'UN ÉVAPORATEUR À DOUBLE CIRCUIT POUR UN RÉFRIGÉRANT HYDROCARBONÉ

Publication

EP 3394529 A4 20190724 (EN)

Application

EP 16880020 A 20161221

Priority

- US 201562270391 P 20151221
- US 2016067996 W 20161221

Abstract (en)

[origin: US2017176077A1] An ice making machine having a refrigeration system designed for hydrocarbon (HC) refrigerants, and particularly propane (R-290), that includes dual independent refrigeration systems and a unique evaporator assembly comprising of a single freeze plate attached to two cooling circuits. The serpentine is designed in an advantageous pattern that promotes efficiency by ensuring the even bridging of ice during freezing and minimizing unwanted melting during harvest by providing an even distribution of the heat load. The charge limitations imposed with flammable refrigerants would otherwise prevent large capacity ice maker from being properly charged with a single circuit. The ice making machine includes a single water circuit and control system to ensure the proper and efficient production of ice. Material cost is conserved as compared to a traditional dual system icemaker.

IPC 8 full level

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CPC (source: EP KR US)

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Citation (search report)

- [X] EP 2284460 A1 20110216 - HOSHIZAKI ELECTRIC CO LTD [JP]
- [A] US 2014260375 A1 20140918 - CASSERILLA BRIAN [US], et al
- [A] US 2015257548 A1 20150917 - SHAPIRO DORON [US], et al
- See also references of WO 2017112758A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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US 10502472 B2 20191210; **US 2017176077 A1 20170622**; AU 2016378569 A1 20180705; AU 2016378569 B2 20201210; AU 2021200441 A1 20210225; AU 2021200441 B2 20220929; CN 108474605 A 20180831; EP 3394529 A1 20181031; EP 3394529 A4 20190724; EP 3394529 B1 20240911; HK 1259383 A1 20191129; JP 2019500569 A 20190110; JP 2021167725 A 20211021; JP 7025587 B2 20220224; JP 7165054 B2 20221102; KR 102622596 B1 20240110; KR 20180087436 A 20180801; MX 2018007526 A 20180907; MX 2021000261 A 20210412; US 10677505 B2 20200609; US 11231218 B2 20220125; US 11846459 B2 20231219; US 2020033043 A1 20200130; US 2020256605 A1 20200813; US 2022349641 A1 20221103; WO 2017112758 A1 20170629

DOCDB simple family (application)

US 201615386578 A 20161221; AU 2016378569 A 20161221; AU 2021200441 A 20210122; CN 201680079591 A 20161221; EP 16880020 A 20161221; HK 19101751 A 20190131; JP 2018532232 A 20161221; JP 2021119046 A 20210719; KR 20187020458 A 20161221; MX 2018007526 A 20161221; MX 2021000261 A 20180619; US 2016067996 W 20161221; US 201916590484 A 20191002; US 202016864346 A 20200501; US 202217570860 A 20220107